

Research on the Development Trend of Wenzhou Digital System

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Abstract: The digital environment is improving day by day. All walks of life, such as agriculture, industry, trade, transportation and so on, closely embrace digitization. Data resources are increasingly becoming an important factor in economic and social development, and the proportion of digital economy in GDP is increasing year by year. At present, Zhejiang Province is in the second stage of digital reform, in the process of promoting the standardization and systematization of digital reform. The construction of digital standard system in Wenzhou is mainly concentrated in 2021-2025, which is the second stage of digital transformation and reform in Zhejiang Province. Wenzhou has made outstanding achievements in the application of public data, which mainly covers 16 aspects such as transportation, medical and health care, life service and credit service, with a total of 26 kinds of applications. In order to promote the transformation and utilization of public data and incubate new industries, Wenzhou has built South Zhejiang Science and Technology City. Realize industrial agglomeration, function integration, factor intensification, industry and city integration, create an intensive highland, and promote the deep integration of industry and data.

Keywords: Digital reform, Digital economy, Development trends, Public data.

1. Introduction

In recent years, our digital environment is improving gradually. The popularization and penetration rate of information facilities (5G, optical fiber, IPV6, etc.) is increasing; Agriculture, industry, trade, transportation and other industries are closely embracing digitalization; Government digital public services have produced remarkable results. Data resources are increasingly becoming an important factor in economic and social development, and the proportion of digital economy in GDP is increasing year by year.

2. Background and Current Situation

The report to the 20th National Congress of the Communist Party of China pointed out that we should speed up the building of a cyber power and a digital China. Building a digital China is an important engine for promoting Chinese-style modernization in the digital era, and a strong support for building new competitive advantages of the country. The Central Committee of the Communist Party of China and The State Council issued the Overall Layout Plan for Digital China, which defines the overall framework of Digital China 2522 in accordance with the strategic path of consolidating the foundation, empowering the overall situation, strengthening capacity and optimizing the environment, and makes comprehensive plans from the strategic perspective of the overall development of the cause of the Party and the country.

In 2022, all regions, departments and sectors will actively explore and practice digital China, entering a new stage of overall planning and comprehensive progress. Since the 19th CPC National Congress, local governments have attached great importance to the construction of digital transformation and digital standard system. Zhejiang Province, as a pioneer and demonstration province of digital reform, has successively issued the "Standardization Construction Plan of Zhejiang Province for Digital Transformation" to implement

and deploy digital transformation, the "Standardization System Construction Plan of Zhejiang Province for Digital Reform" to promote the construction of digital reform standard system, and the "Regulations of Zhejiang Province on Public Data Management" to regulate the safe management, efficient use and innovation of public data. Wenzhou has also issued the 14th Five-Year Plan for National Economic and Social Development of Wenzhou and Outline of Long-term Goals for 2035 to comprehensively promote the construction of digital economy. Interim Measures for the Management of Public Data Sharing and Opening in Wenzhou detailed the management and implementation of public data in Wenzhou, established the organizational mechanism, improved and implemented the requirements of digital reform, and established industrial clusters. We will improve the standard system for digital reform.

3. Organizational System and Policy Guarantee

In order to ensure the accuracy and orderly progress of the digital reform, the leadership of the Party has been throughout the whole process and all aspects of the digital reform. Under the leadership of the provincial Standardization Strategy Leading Group and the Provincial Digital Reform Leading Group, Wenzhou Municipal government innovates the collaborative mechanism, improves the theoretical and institutional system, and strengthens the construction of the organizational system and policy guarantee. Set up digital reform leading group and special class, decompose tasks, clear division of labor, coordination. With Wenzhou Big Data Development Bureau as the leading unit, all departments will strengthen communication and cooperation, and rely on high-tech enterprises, scientific research institutes and universities to promote digital reform in a coordinated way. Implementing the "Eight-Eight Strategy" and building an "important window". The People's Government of Wenzhou issued the Implementation Opinions of Wenzhou Municipal People's Government Office on Further Promoting the Transformation

and Upgrading of Traditional Manufacturing Industry Version 2.0, the Action Plan for the Innovation and Development of Software and Information Service Industry of Wenzhou (2021-2023), and Ten Policies for Promoting the Innovation and Development of Software and Information Service Industry of Wenzhou. Each focal unit and each line systematically sorted out related business, straightened out the direction and ideas of digital reform and development, and successively issued the "14th Five-Year Plan" for the Development of Education in Wenzhou, the "14th Five-Year Plan" for the Development of Tourism in Wenzhou, the "14th Five-Year Plan" for the Construction of Digital Government in Wenzhou, and other planning schemes. Specify key development tasks and directions, encourage, support and cultivate enterprises, actively promote innovation and development, qualification certification, standard formulation, brand building, market expansion, industrial clusters, talent introduction, and so on, give financial support to boost the development of information and digital industry in Wenzhou.

4. Development Goals and Plans

In order to implement the "14th Five-Year Plan" for the development of digital economy, promote the digital deployment and high-quality development of our province. Zhejiang Provincial government has successively issued the Plan for Standardization Construction of Zhejiang Province's Digital Transformation (2018-2020) to promote the implementation of digital reform and construction, and the Plan for Standardization System Construction of Zhejiang Province's Digital Reform (2021-2025) to promote the construction of digital reform standard system. Wenzhou digital system is in accordance with the above plan orderly progress.

4.1. Phase of Digital System Construction

The digital transformation construction phase of Wenzhou is mainly focused on 2018-2020, which is the first stage of the digital transformation and reform of Zhejiang Province. In order to achieve high-quality development and complete the construction achievements of "one run at most", "One network management", "One network operation" and "One network cooperation", Wenzhou Municipal People's Government adheres to systematic layout and scientific planning, takes "high-quality development" as the focus, and makes clear the to-do list of digital transformation. Adhere to open and sharing, coordinated development, give play to the role of connectivity, break information isolation, and realize the deep integration of data and resources in various fields; Demand-oriented, key breakthrough, promote digital transformation in all fields. The digital transformation of Wenzhou city mainly focuses on the digital government, digital economy and digital society.

4.1.1. Digital Government

Wenzhou Municipal government takes the opportunity of implementing the "run once at most" to improve the standardized operation mechanism, form a standard system framework, and integrate digitalization into government public services such as decision-making, feedback, supervision and implementation. We will promote the construction of large platforms, big data and big integration, build a standard system, and set up an open platform for public data. In accordance with the requirements of cross-departments, cross-levels and cross-fields, the key nodes of

data communication should be connected, and the public data resource catalog compilation and public data management specification formulation of all units and departments should be coordinated and promoted.

4.1.2. Digital economy

Wenzhou government actively promotes the development and implementation of advanced standards in artificial intelligence, Internet, big data, Internet of Things and other industries to seize the high ground of digital economy. We will promote the integrated development of digital technologies such as big data and artificial intelligence with traditional industries, foster and incubate new industries, and generate new service models, organization and production standards. We will promote the development of new trade centers, digital LABS, financial centers, industrial parks, and trading ports, and standardize the results of innovation.

4.1.3. Digital society

Wenzhou Municipal government actively builds intelligent public services, explores the mode of "standardization and big data and public services", and promotes the standardization of education, health, culture, finance, examination and approval supervision, registration management, etc. We will promote digitalization of public consumption, accelerate the standardization of achievements in public consumption, and foster new forms of consumption.

4.2. Digital standardization system construction stage

The construction of digital standard system in Wenzhou is mainly concentrated in 2021-2025, which is the second stage task of the digital transformation and reform in Zhejiang Province.

Wenzhou Municipal government adheres to overall planning, integrated promotion, all-round, multi-level, unified management and coordinated promotion; Taking the difficulties, pain points and blocking points of reform as demand traction, orderly progress, mature a batch, formulate a batch, and speed up the improvement of the digital standard system. We will focus on practical results and improve technical support and security. Strengthen multi-party exchanges and cooperation, refine and summarize mature experience and standards. Wenzhou standard system construction mainly focuses on standard system, work promotion system, technical support system and security system.

4.2.1. Standard system

Wenzhou Municipal government will go deep into all aspects and the whole process of digital reform, promote the standardization of basic specifications, construction guidelines, system construction, typical applications and performance evaluation through unified methods, objects, construction guidelines, component modules, application scenarios and integrated standards, and performance evaluation system, and provide basic standards.

4.2.2. Work promotion system

Deepen each link and key node of the business process, straighten out the process structure. We will actively promote and establish a unified and standardized work system and mechanism for the whole process.

4.2.3 Technical support system

Cooperate with expert teams and technical organizations to grasp the technical framework and architecture, in-depth analysis of technical implementation standards and methods,

and actively promote the standardization of big data, Internet, blockchain, artificial intelligence and other digital technologies.

4.2.4 Security guarantee system

In combination with the Cyber Security Law, Information Security Law, Data security Law and other relevant systems and norms of digital reform, actively promote the standardization and unification of the security system and system needed in the construction of digital system.

4.3. Development Status of Digital System

Aiming at the construction of digital system, Wenzhou Municipal government builds an efficient, collaborative and high-quality digital standard system based on the needs, problems and effects. We will give full play to the supporting, leading and normative role of the standard system in the construction and establishment of the digital system. In accordance with the three-step construction plan, China has completed the formulation of the framework of the standard structural system and the establishment of the working mechanism, and basically completed the standard system of digital government, digital rule of law, digital society, digital economy and overall smart governance. At present, Wenzhou City is actively promoting the comprehensive completion of

digital system standards and extensive and efficient implementation.

5. Operation Mechanism of Digital System

The operation of the digital system of the whole province needs the support of high quality, all-round, multi-level and multi-field data. With data sources as the basic elements, data development and innovation should be carried out to form a new ecology and new standard of digitalization system, and then lead and guide digitalization work. Public data (the state organs of this Municipality, the organizations authorized by laws and regulations to manage public affairs, and the public service operation units such as water supply, power supply, gas supply and public transportation, etc., Data collected and generated in the process of performing duties or providing public services in accordance with the law), as an aggregate of the largest volume, involving the widest range of fields and closely related to the government, society, economy and other aspects, is the core data for the construction and operation of the entire digital system. Therefore, the acquisition, management and innovative utilization of public data is the core of the construction and operation of digital system. The operational architecture for common data is shown in Figure 1.

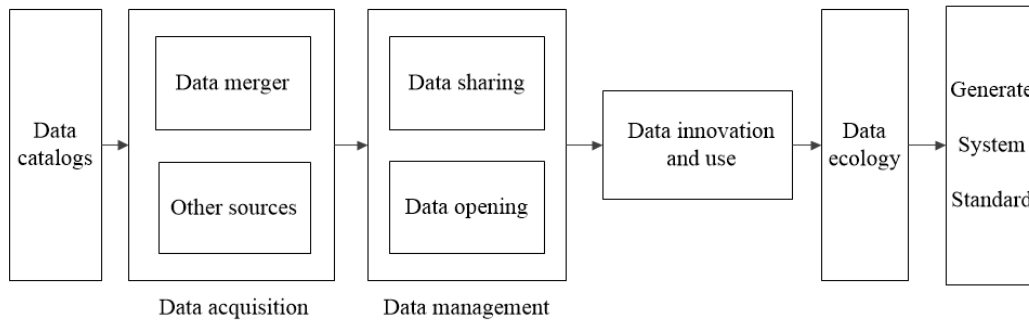


Figure 1. The operational architecture for Common data

5.1. Obtaining Public Data

Wenzhou implements catalog management of public data, which is mainly obtained through data collection and other data sources. The specific business process of public data acquisition is that each unit, organization and line system evaluates the business data in their own field (each unit and organization shall not collect data repeatedly or forcibly when collecting data) and designate specials to sort out, update and catalog data lists, data fields and data entries on a regular basis (that is, compile the directory structure of public data). Each

unit and each line system will upload data to the public data platform regularly through the front machine, data interface, data warehouse, etc. The managers of the public data platform analyze and evaluate the data feedbacks of various systems and organizations, carry out data cleaning, improve data quality, and update the data to the public data platform again, that is, complete the data collection. Other sources of data are also pushed to the public data platform through interfaces and preprocessors. At this point, the data acquisition is complete. The specific business process of public data acquisition is shown in Figure 2.

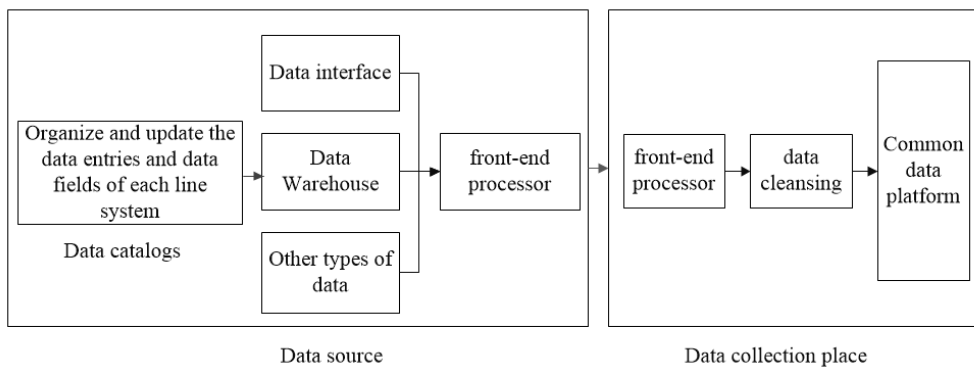


Figure 2. Public Data acquisition process

5.2. Public Data Management

The management of public data runs through the whole process and all aspects of digital system construction. Public data management involves hardware facility management and maintenance, software resource configuration and upgrade, rules and regulations revision and improvement, and data cleaning. The specific services involved are: sharing and opening public data. Public data sharing can be divided into unconditional sharing, restricted sharing and non-sharing. Specifically, it refers to the behavior that public administration and service institutions use the data of other public administration and service institutions or provide data to other public administration and service institutions according to

law for the purpose of performing statutory duties or providing public services. Public data opening refers to the public service behavior that natural person, legal person or unlegal person organization provides public data according to law. According to the open property, it can be divided into unconditional open, restricted open and forbidden open data. Public data means that all units and line systems release open data to Wenzhou public data open platform and provide external data services. For unconditionally open public data, natural person, legal person or unlegal organization can directly download; For restricted and open public data, it is necessary to apply for data from the corresponding focal point, and the data can be obtained after the approval of the focal point. The public data opening process is shown in Figure 3.

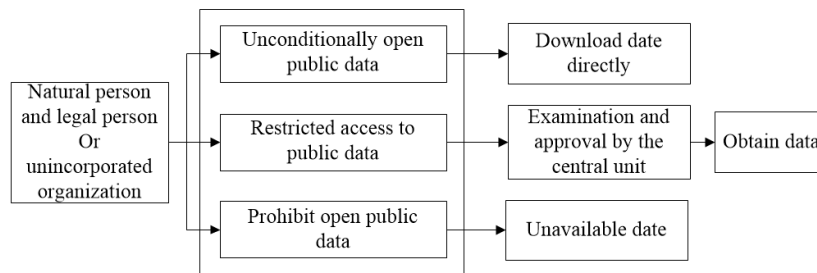


Figure 3 Public Data opening process

By the beginning of April 2023, 72 municipal units, 12 district and county units, 2 functional areas and 2,149 open data sets have been opened on Wenzhou public Data Open Platform. Among them, 1180 data sets (1180 API interfaces), 13,365 data items, 13,82,587,600 data pieces and 969 restricted open data sets were unconditionally opened.

Opening-up covers 22 areas, including scientific and technological innovation, urban construction and housing, legal services, resources and energy, and medical and health care. The proportion of open data items in various industries is shown in Figure 4, the open data items in cities, counties and urban areas are shown in Figure 5.

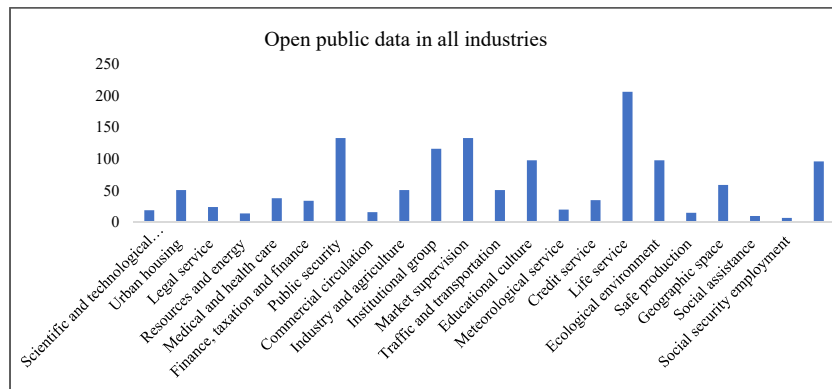


Figure 4 Open public data in each industry

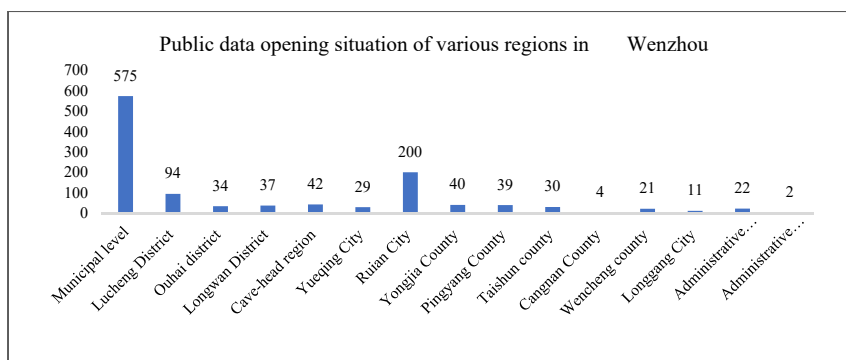


Figure 5 Public data opening situation of various regions in Wenzhou

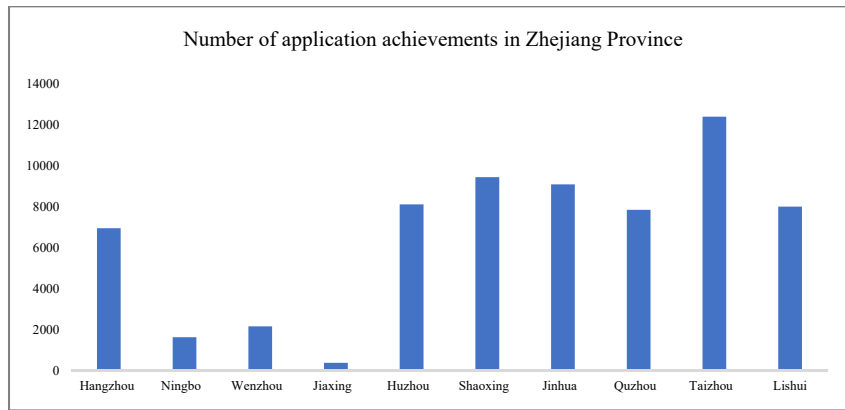


Figure 6 Number of application achievements in Zhejiang Province

The public data opening situation of different cities is shown in Figure 6.

Through the above data results and comparative analysis, Wenzhou City has a large amount of all kinds of open public data, or better data use situation. However, the use and download of main urban construction archives and geographical location information, other types of data development and utilization need to be further improved and provided. At the same time, compared with other cities at the same level, the amount of open public data in Wenzhou needs to be further optimized and improved.

6. Public data ecology and innovative application

6.1 Open Ecology

In order to thoroughly implement the Regulations on Public Data of Zhejiang Province, further deepen and promote the breadth and depth of public data services. Wenzhou Municipal Government implements the requirements of the provincial government, relies on the integrated intelligent public data platform of Zhejiang Province, encourages social enterprises, organizations and individuals to actively participate in data mining and innovation, and gives financial incentives and policy support to promote the establishment and development of public data ecology.

Since 2021, it has carried out several public data opening activities to expand the data collection scope and openness of all units and business lines. Wenzhou Municipal Government held the Zhejiang Data Open Innovation Application Competition in 2022 to promote the public's familiarity with and mastery of the public data application process through the Innovation application competition. The competition focuses on employment and entrepreneurship, green and low-carbon development, social security, strengthening villages and enriching farmers, public health, expanding and improving the economy, covering the core and key points of Wenzhou's economic development. The results of the competition will be based on the actual situation to carry out industrial incubation and boost the high-quality development of Wenzhou economy.

6.2 Application Results

Wenzhou has made outstanding achievements in the application of public data, which mainly covers 16 aspects such as transportation, medical and health care, life service and credit service, with a total of 26 applications. The application types cover H5 webpage, mobile APP, wechat mini program, etc. Through visualization, map positioning, interface opening and other ways, public data use and innovation. As of April 2023, the application achievements in Wenzhou City and the distribution of various fields are shown in Figure 7.

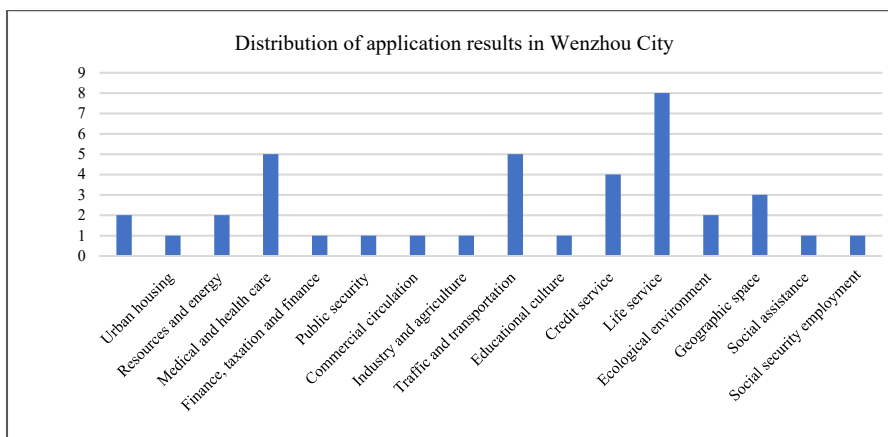


Figure 7 Distribution of application achievements in Wenzhou

As can be seen from Figure 7, by April 12, 2023, application achievements in Wenzhou are widely distributed

and highly representative. However, the number of application achievements in various fields is small, and the depth of

application achievements needs to be further improved.FIG. 8 shows the application achievements of cities at the same

level in Zhejiang Province.

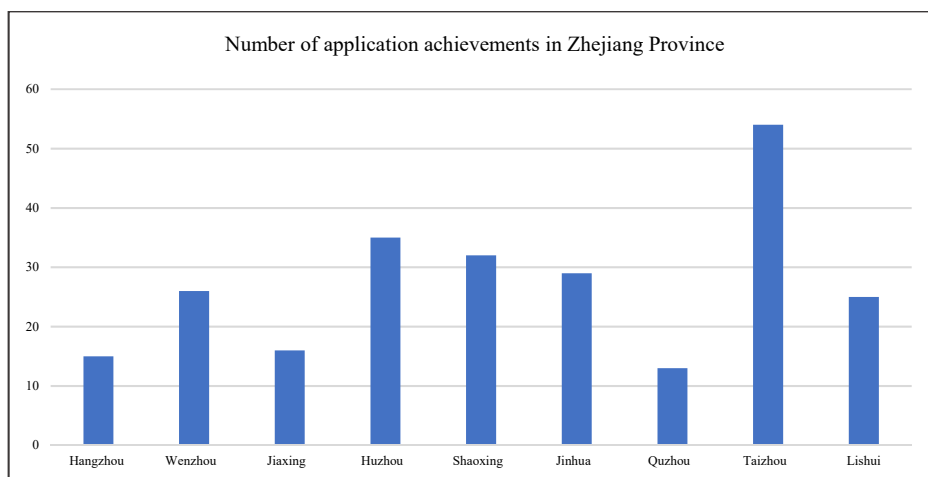


Figure 8 Number of application achievements in Zhejiang Province

As shown in Figure 8, by April 12, 2023.The number of application achievements in Wenzhou ranks lower among other cities at the same level in Zhejiang Province.Wenzhou needs to further deepen the refining of public data

application achievements.The access situation of application achievements in various cities of Zhejiang Province is shown in Figure 9.

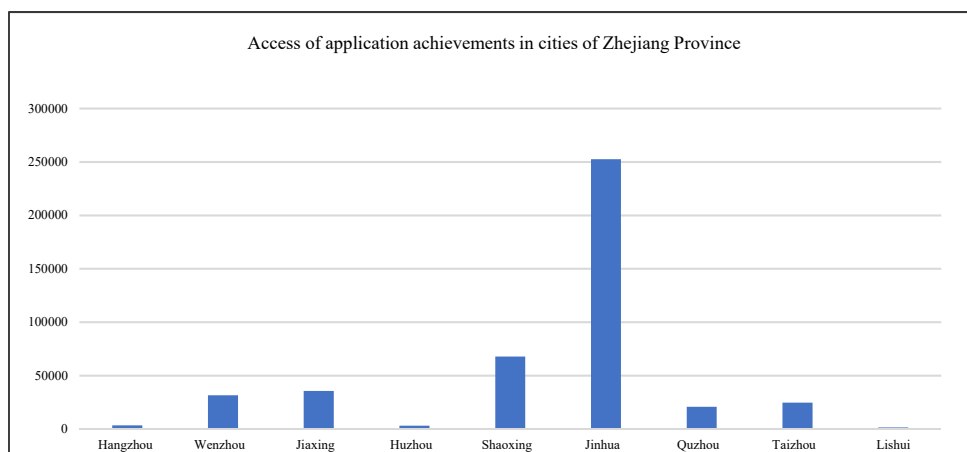


Figure 9 Access situation of application achievements in major cities of Zhejiang Province

By analyzing the data of Wenzhou and other cities.It can be seen that the number of visits to various application achievements in Wenzhou is relatively small, and compared with cities of the same level, the number of visits is relatively low.This reflects to a certain extent that Wenzhou public data needs to be further explored and innovated.At the same time, Wenzhou municipal government should also expand the channels, increase the social knowledge and recognition of public data, actively promote the use and innovation of public data by social enterprises, organizations and individuals, and establish a good ecology of public data opening, utilization and achievement transformation.

6.3 Incubate industrial clusters

In order to promote the transformation and utilization of public data and incubate new industries, Wenzhou built the Science and Technology City of southern Zhejiang.To realize industrial agglomeration, function integration, factor intensification, industry and city integration, create intensive

highland, and promote the deep integration of industry and data.Recently, China (Wenzhou) Shuan Port (National Data factors Comprehensive Pilot Zone Demonstration Park) settled in Ouhai District, firmly grasp the data economy, promote the marketization of data factors, leverage the development of digital economy, and create a precedent of data factors marketization.

7. Opportunities and challenges

Currently, Zhejiang Province is in the second stage of digital reform, in the process of promoting standardization and systematization of digital reform.There are both opportunities and challenges in the improvement and development of Wenzhou's digitalization system.Wenzhou has the spirit of daring to be the first in the world, and has a huge user group to generate, improve and use public data, which provides enough first-mover advantages for the systematization and standardization of the results of digital reform.However, based on the actual development situation,

Wenzhou still has a weak foundation, advantages are not outstanding, and the results are not highly incubated. Therefore:

(1) Consolidate the foundation. Deepen the breadth and depth of data collection, and integrate data collection into daily business through system improvement, business process optimization and key node control. Increase law popularization efforts, actively publicize the Construction Plan of Zhejiang Digital Reform and Standardization System, Zhejiang Public Data Management Regulations, etc., increase training, improve staff literacy, and improve data quality.

(2) Make excellent results. Expand the social familiarity of public data, explore the application scenarios of public data, take the actual needs of the industry as the cutting point, and actively promote the achievement of public data application.

(3) Promote standardization. Summarize experience, refine achievements, summarize achievements of digital reform, form a system and form standards.

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